REMARKS

I. STATUS OF THE CLAIMS

In accordance with the foregoing, claims 1 and 43 have been amended, claims 17-22, 34-40, 44 and 46 have been cancelled without prejudice or disclaimer. New claims 47 and 48 have been added. Claims 1-16, 23-33, 41-43, 45 and 47-48 are pending and under consideration.

II. THE REJECTION OF CLAIM 1 UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Claim 1 has been amended in accordance with the Examiner's suggestion. Accordingly, Applicants respectfully request that the rejection of claim 1 under 35 U.S.C.§112, second paragraph be withdrawn.

III. THE REJECTION OF CLAIMS 1-3, 17-19 AND 41-46 UNDER 35 U.S.C §102(b) AS BEING ANTICIPATED BY MUTSUI

Applicants respectfully traverse this rejection for at least the following reasons.

Independent claim 1 recites a data scrambler for a high density optical recording/reproducing apparatus, including amongst other novel elements "a random data generator which generates random data having a random data generation cycle based on a result obtained by multiplying at least a size of a first data frame by a result obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame."

The Office Action relies upon Matsui for a teaching of the various elements of the data scrambler of the present invention and cites column 8, lines 45-47and lines 55-60 of the specification for such a teaching.

However, at column 8, lines 45-47 Matsui discloses a formula $(S_{max}/M_{loop})+1/D_w xD_w<C_{cycle}$ for obtaining a scrambling signal, wherein S_{max} denotes the number of sectors included in the innermost circumferential track, M_{loop} denotes the number of times that one scrambling signal is repeated continuously, D_w denotes an offset width between the initial value of an M period sequence and that of a next M period sequence and C_{cycle} denotes the maximum number of sectors expressed by the cyclic period of an M period sequence (column 4, lines 25-36).

That is, Matsui discloses a formula for scrambling a signal by dividing the number of sectors included in the innermost circumferential track by the number of times that one scrambling signal is repeated continuously and then adding that result by multiplying an offset width between the initial value of an M period sequence and that of a next M period sequence, wherein this result is less than the maximum number of sectors expressed by the cyclic period of an M period sequence.

Accordingly, Matsui fails to teach or suggest "multiplying at least a size of a first data frame by a result obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame," as recited in independent claim 1.

Accordingly, Applicants respectfully assert that the rejection of independent claim 1 under 35 U.S.C. § 102(b) should be withdrawn because Matsui fails to teach or suggest each feature of independent claim 1.

Furthermore, Applicants respectfully assert that dependent claims 2-3 are allowable at least because of their dependence from claim 1, and the reasons set forth above.

Claims 17-19 have been cancelled without prejudice or disclaimer. Accordingly, Applicants respectfully assert that the rejection of claims 17-19 under 35 U.S.C. §102(b) should be withdrawn.

Independent claim 41 recites a data scrambler comprising amongst other novel elements, "a random data generator which generates random data and adjusts a random data generation cycle of the random data based upon a data amount of two tracks in an outermost circumference of the optical disc."

Matsui discloses a method of recording information signals on an information signal recording medium scrambled with scrambling signals (column 1, lines 6-11). To achieve this, Matsui provides recording information signals of a binary digital signal train on an information signal recording medium formed with circular information signal tracks by scrambling the information signals with scrambling signals of cyclic codes, wherein a period at which the scrambling signals make a round is determined longer than a time length of an information signal quantity recorded on a predetermined portion at the information signal track of the maximum recording capacity (column 2, lines 39-48).

Accordingly, Matsui fails to teach or suggest "a random data generator which generates random data and adjusts a random data generation cycle of the random data based upon a data amount of two tracks in an outermost circumference of the optical disc," as recited in claim 41.

Accordingly, Applicants respectfully assert that the rejection of independent claim 41 under 35 U.S.C. §102(b) should be withdrawn because Matsui fails to teach or suggest each feature of independent claim 41.

Furthermore, Applicants respectfully assert that dependent claim 42 is allowable at least because of its dependence from claim 41, and the reasons set forth above.

Newly amended independent claim 43 recites a data scrambler comprising amongst other novel elements "a random data generator which generates random data and adjusts a random data generation cycle of the random data based upon a data amount in an innermost circumference of the optical disc and the size of each sector and a size of each error correction block."

As noted above, Matsui provides recording information signals of a binary digital signal train on an information signal recording medium formed with circular information signal tracks by scrambling the information signals with scrambling signals of cyclic codes, wherein a period at which the scrambling signals make a round is determined longer than a time length of an information signal quantity recorded on a predetermined portion at the information signal track of the maximum recording capacity (column 2, lines 39-48).

Therefore, Matsui also fails to teach or suggest "a random data generator which generates random data and adjusts a random data generation cycle of the random data based upon a data amount in an innermost circumference of the optical disc and the size of each sector and a size of each error correction block," as recited in newly amended independent claim 43.

Accordingly, Applicants respectfully assert that the rejection of independent claim 43 under 35 U.S.C. §102(b) should be withdrawn because Matsui fails to teach or suggest each feature of independent claim 43, as newly amended.

Independent claim 45 recites a data scrambler comprising amongst other novel elements "a random data generator which generates random data and adjusts a random data generation cycle of the random data based upon a size of each sector and a size of each error correction

block."

As noted above, Matsui provides recording information signals of a binary digital signal train on an information signal recording medium formed with circular information signal tracks by scrambling the information signals with scrambling signals of cyclic codes, wherein a period at which the scrambling signals make a round is determined longer than a time length of an information signal quantity recorded on a predetermined portion at the information signal track of the maximum recording capacity (column 2, lines 39-48).

Therefore, Matsui also fails to teach or suggest "a random data generator which generates random data and adjusts a random data generation cycle of the random data based upon a size of each sector and a size of each error correction block," as recited in independent claim 45.

Accordingly, Applicants respectfully assert that the rejection of independent claim 45 under 35 U.S.C. §102(b) should be withdrawn because Matsui fails to teach or suggest each feature of independent claim 45.

Claims 44 and 46 have been cancelled without prejudice or disclaimer. Accordingly, Applicants respectfully assert that the rejection of claims 42 and 46 under 35 U.S.C.§102(b) should be withdrawn.

IV. THE REJECTION OF CLAIMS 4-16 AND 20-40 UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER MATSUI IN VIEW OF ECMA-267

Claims 20-22 and 34-40 have been cancelled without prejudice or disclaimer. Accordingly, Applicants respectfully assert that the rejection of dependent claims 20-22 and 34-40 under 35 U.S.C.§103(a) should be withdrawn.

Claims 4-16 and 23-33 depend upon independent claim 1. As noted above, Matsui fails to teach or suggest "multiplying at least a size of a first data frame by a result obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame," as recited in independent claim 1.

ECMA-267 discloses at section 17, FIG. 19, a feedback shift register in which bits r_7 (msb) to r_0 (lsb) represent a scrambling byte at each 8-bit shift.

Accordingly, ECMA-267 also fails to teach or suggest the above noted features recited in

independent claim 1.

Accordingly, Applicants respectfully assert that the rejection of dependent claims 14-16 and 23-33 under 35 U.S.C. §103(a) should be withdrawn because neither Matsui nor ECMA-267 whether taken singly or combined teach or suggest each feature of independent claim 1.

V. CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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